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CHAKOUR, ISSAM				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/562,918

Applicant(s)

MORIMOTO, SHINICHI

Examiner

ISSAM CHAKOUR

Art Unit

2617

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

This office action is in response to the amendments and arguments filed on 12/10/2008. The applicant amended claims 17 and 28, no other claims have been introduced. The applicant amended the specification by changing the title to be more descriptive. The examiner withdraws the objection to the specification as the title is put into proper form.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 17, 20, 21, 28, and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Hirano et al (US 2004/0247278).

3. Regarding claims 17 and 28, Hirano teaches a communication system comprising:

a plurality of access point apparatus arranged along a predetermined route (See figure 6, items 11), a plurality of station apparatus arranged on a mobile body adapted to move along the predetermined route (See figure 6, items 33) and an intra-mobile-body communication network for connecting the plurality of station apparatus (See figure 7A, items 31), the station apparatus being adapted to become belonging to one of the

access point apparatus by wireless communication so as to be connected to a network by way of the access point apparatus (See figure 7A), the station apparatus located front-most in the moving direction of the mobile body (See figure 8A, item 33 in the first vehicle towards the second communication feasible area) being adapted to transmit the information acquired at the time of retrieving an access point apparatus to which the station apparatus located front-most in the moving direction of the mobile body is adapted to belong (See figure 7A, access point 19 in communication with item 33), to the station apparatus other than the station apparatus located front-most in the moving direction of the mobile body (See figure 8A-D, item 33 in the first vehicle that was in communication with item 19 in the first communication feasible area is no longer communicating with that access point, but item 33 in the last vehicle is still retrieving data through 19 in the first communication feasible area) by way of the intra-mobile-body communication network (See figure 7A, items 31). Wherein upon the station apparatus other than the station apparatus located front most in the moving direction of the mobile body moves out of contact of a prior access point (See figure 7B, there exist a plurality of station apparatuses or elements 33 in each mobile body), the information acquired at the time of retrieving the access point apparatus to which the station apparatus located front most in the moving direction of the mobile body is adapted to belong is used to connect the station apparatus other than the station apparatus located front most in the moving direction to the access point apparatus without performing a scan (See [0075], lines 8-14, note that Hirano in figure 7B, discloses a second station

apparatus that receives the information about the AP that has been connected to the front most station by way of the intra-mobile-body network).

4. Regarding claim 20, Hirano discloses a communication system in accordance with claim 17, wherein each of the station apparatuses has means for judging or detecting (See paragraph [0074], lines 4-11) if the own apparatus is located front-most in the moving direction of the mobile body or not (see also figure 6).

5. Regarding claim 21, Hirano teaches a communication system in accordance with claim 17, wherein when two or more than two station apparatus are located front-most in moving direction, at least one of the station apparatus keeps on belonging to the access point apparatus while the other station apparatus retrieves an access point apparatus to which it is adapted to belong when the communication quality is degraded relative to the access point apparatus to which they are belonging (See paragraph [0074] and [0075]).

6. Regarding claim 31, Hirano teaches the communication system according to claim 28, wherein when two or more station apparatuses on a mobile body is located front-most in the moving direction (See figure 7B, note that there are a plurality of station apparatuses or elements 33 in each moving body), at least one of the station apparatus keeps on belonging to the access point apparatus while the other station apparatus retrieves an access point apparatus to which it is adapted to belong when the communication quality is degraded relative to the access point apparatus to which they are belonging (See paragraph [0074] and [0075]).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 18, 19, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano in view of Syed (US. 6,845,230).

10. Regarding claims 18 and 19, Hirano discloses the communication system as in claim 17. Hirano does not teach explicitly that the transmissions in the communication system is both push and pull transmission. However, Syed discloses a communication system wherein the transmission involved is a Push-Pull transmission (See column 1, lines 35-40). Note that Push and the corresponding Pull transmission is widely used in digital packet-based synchronous communications and broadcasting such as the internet. It would have been obvious to one of ordinary skill in the art to combine Hirano's invention to include internet service as taught implicitly in Syed, because a

passenger in a train as disclosed Hirano might desire to check emails or other service online (See paragraph [0042] in Hirano, last line). Furthermore, Push-Pull transmission would also allow digital broadcasting at certain locations that a train might pass by.

11. Regarding claims 29 and 30, Hirano teaches the communication system in accordance with claim 28. Hirano does not teach explicitly that the transmissions in the communication system is both push and pull transmission. However, Syed discloses as mentioned above a communication system wherein the transmission involved is a Push-Pull transmission (See column 1, lines 35-40). It would have been obvious to one of ordinary skill in the art to modify the invention as disclosed by Hirano to integrate a Push-Pull technology as taught by Syed for the reasons discussed above.

12. Claims 22-27 and 32-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano in view of Moelard (US 5,636,217).

13. Regarding claim 22, Hirano discloses a communication system comprising: a plurality of access point apparatus arranged along a predetermined route (See figure 6, items 11), a plurality of station apparatus arranged on a mobile body adapted to move along the predetermined route (See figure 6, station refers to items 33) and an intra-mobile-body communication network for connecting the plurality of station apparatus (See figure 7A, items 31), the station apparatus being adapted to become belonging to one of the access point apparatus so as to be connected to a network by way of the access point apparatus,

the station apparatus located front-most in the moving direction of the mobile body being adapted to store (Although Hirano does not explicitly teach storing the information, however sending information necessarily requires at least storing them in a memory for buffering after being processed, see paragraph [0075], lines 8-14) the information it acquires at the time of retrieving an access point apparatus (See paragraph [0075], lines 1-7) to be belonging to in the storage means by way of the intra-mobile-body communication network (e.g. the internal communication, see paragraph [0067], line 6), the station apparatus other than the station apparatus located front-most in the moving direction of the mobile body being adapted to refer to the information stored by the front-most station apparatus in the storage means prior to retrieving an access point apparatus to be belonging to (See paragraph [0075], lines 8-14). Hirano does not explicitly disclose that each of the station apparatus having storage means for storing information showing the access point apparatus to which it used to belong to. However, Moelard discloses one of a plurality of stations each having storage means for storing information showing the access point apparatus to which it used to belong to (See claim 8 step b).

It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Hirano's handover process with Moelard's teaching of storing information by each station of the access point apparatus that previously was registered to, because storing the information of access point being connected to or registered to would allow other stations yet to be connected to have that information ready for a seamless handoff.

14. Regarding claim 32, Hirano discloses the communication system comprising a plurality of access point apparatus arranged along a predetermined route (See figure 6, items 11),

Hirano further discloses that a plurality of station apparatus arranged on a plurality of mobile bodies adapted to move in the same direction along a predetermined route, and that each of the said mobile bodies having at least a station apparatus arranged thereon (See figure 7b).and

an inter-mobile-body communication network for connecting the plurality of station apparatus (See figure 7A, item 31),

the station apparatus being adapted to become belonging to one of the access point apparatus by wireless communication so as to be connected to a network by way of the access point apparatus (See figure 7),

each of the station apparatus having means for judging if it is located front-most in the moving direction of the mobile body or not (See figure 6),

the station apparatus arranged in the mobile body located front-most in the moving direction being adapted to store(See paragraph [0075], lines 8-14) the information it acquires at the time of retrieving an access point apparatus (See paragraph [0075], lines 1-7) to be belonging to in the storage means by way of the intra-mobile-body communication network.

Hirano does not explicitly teach that each of the station apparatus having storage means for storing information showing the access point apparatus to which it used to belong to. He also does not teach that the station apparatus arranged in the mobile bodies other than the mobile body located front-most in the moving direction being adapted to refer to the information stored by the station apparatus arranged in the mobile body located front-most in the storage means prior to retrieving an access point apparatus to be belonging to.

15. Moelard discloses each of the station apparatus having storage means for storing information showing the access point apparatus to which it used to belong to (See claim 8b). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Hirano's handoff process such that each station on each of the plurality of the mobile bodies stores the information of the access point apparatus previously registered to as thought by Moelard because storing the information of access point being connected to or registered to would allow other stations yet to be connected to have that information ready for a seamless handoff.

16. Regarding claim 23, Hirano in view of Moelard discloses the communication system in accordance with claim 22. Hirano further teaches that the intra-mobile-body is a local area network connecting a plurality of stations in a mobile body (See figure 7A, items 31). Hirano does not teach that the storage means is connected to the intra-mobile-body communication network. However Moelard teaches that the storage means is connected to a wireless local area network (See claim 1). It would have been obvious

to one of ordinary skill in the art to connect the storage means that contained access point information as taught by Moelard to other stations through a local area network taught by Hirano in order to perform transfer and exchange of such information for the purpose of handoff.

17. Regarding claim 24, Hirano in view of Moelard teaches the communication system according to claim 22, Hirano does not explicitly teach that the storage means is provided at each station. Moelard as mentioned above does teach the latter feature (See claim 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide in Hirano's invention each station in the mobile body with storage means as taught by Moelard because access point information available at the front-most station would be referred to the next station moving toward the access point in the direction the mobile body is moving.

18. Regarding claim 25, Hirano in view of Moelard teaches the communication system in accordance with claim 22, Hirano further teaches that each of the station apparatuses has means for judging or detecting (See paragraph [0074], lines 4-11) if the own apparatus is located front-most in the moving direction of the mobile body or not (see also figure 6).

19. Regarding claim 26, Hirano in view of Moelard the communication system according to claim 25, Hirano further teaches wherein each of the station apparatus judges if the own apparatus is located front-most in the moving direction of the mobile body or not (See paragraph [0074], lines 4-11) according to the information from the front-most station (See paragraph [0075], lines 8-14). However Hirano does not teach

that the information is from the storage means stored in its own storage and other station storage means. Moelard does teach said feature (See claim 8 b, c). Since the information about the next access point is retrieved from the storage means of the front-most station, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine Hirano's invention with Moelard's teaching because said information would allow other stations to determine if they are in the front-most and in the direction in which the mobile body is moving in order to successfully perform a seamless handoff.

20. Regarding claim 27, Hirano in view Moelard teaches the limitations as in claim 22, Hirano further teaches that when two or more than two station apparatus are located front-most in the moving direction (See paragraph [0066], line 6), at least one of the station apparatus keeps on belonging to the access point apparatus while the other station apparatus retrieves an access point apparatus (See figure 8A-D) to which it is adapted to belong when the communication quality is degraded relative to the access point apparatus (e.g. communication unfeasible area) to which they are belonging (See paragraph [0023]).

21. Regarding claim 33, Hirano in view of Moelard discloses the limitation as in claim 32. Hirano further teaches that the intra-mobile-body is a local area network connecting a plurality of stations in a mobile body (See figure 7A, items 31). Hirano does not teach that the storage means is connected to the intra-mobile-body communication network. However Moelard teaches that the storage means is connected to an intra-mobile-body

communication network (e.g. wireless local area network, see claim 1). It would have been obvious to one of ordinary skill in the art to connect the storage that contained access point information to other stations through a local area network in order to perform transfer and exchange of such information for the purpose of handoff.

22. Regarding claim 34, Hirano in view of Moelard teaches the communication system in accordance with claim 32. Hirano does not explicitly teach that the storage means is provided at each station. Nevertheless, Moelard as mentioned above does teach the latter feature (See claim 8). Note Moelard as mentioned above discloses that the storage means is connected to the intra-mobile-body communication network (e.g. wireless local area network, see claim 1). It would have been obvious to one of ordinary skill in the art at the time of the invention to provide each station in the mobile body with storage means because access point apparatus information available at the front-most station (in the front-most mobile body) would be referred to the next station apparatus of the mobile body moving toward the access point in the direction the front-most mobile body is moving.

23. Regarding claim 35, Hirano in view of Moelard discloses the communication system according to claim 32. Hirano further discloses that the station apparatus in the mobile body located front-most in the moving direction judges (See paragraph [0074], lines 4-11) if the mobile body where the own apparatus is arranged is located front-most in the moving direction or not (See figure 7b). However Hirano does not teach that the

information is from the storage means stored in its own storage and other station storage means. Moelard on the other hand does teach said feature as previously mentioned (See claim 8 b, c). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine Hirano's invention with Moelard's teaching because said information would allow other stations to determine if they are in the front-most and in the direction in which the mobile body is moving in order to successfully perform a seamless handoff.

24. Regarding claim 36, Hirano in view of Moelard teaches the communication system as in claim 32. Moreover, Hirano teaches that when two or more than two mobile bodies where station apparatus are arranged are located front-most in the moving direction (see figure 7b), at least one of the station apparatus keeps on belonging to the access point apparatus while the other station apparatus retrieves an access point apparatus to which it is adapted to belong when the communication quality is degraded relative to the access point apparatus to which they are belonging (See paragraph [0074] and [0075]).

Response to Arguments

Applicant's arguments filed on 12/10/2008 have been fully considered but they are not persuasive.

Regarding claims 17, 20, 21, 28, and 31, the examiner respectfully disagrees with the traverse made by the applicant.

In claim 17, the applicant submitted that Hirano does not disclose that the front-most car or moving body has two station apparatuses. The applicant adds that in Hirano

the handover or the process by which the communication information from the previous AP that was communicating with the station in the front-most moving body is forced. The examiner respectfully disagrees and provides the applicant with figure 7B, wherein it is clearly shown that the moving body has at least two station apparatuses one of which is located in the front of front-most moving body. Said station apparatus is in communication via an internal communication mean with a second station which retrieves the information necessary from the front station apparatus belonging to the same moving body in order to be handed off the communication without interruption, this step negates the need for continuous scanning by the entire stations in the moving body (See [0020]).

Regarding claim 21, the applicant submitted that the claim is allowable at least by virtue of its dependency of claim 17. The examiner respectfully disagrees as claim 21 inherits the deficiency in claim 17, and therefore it is not allowable at least by virtue of its dependency.

Regarding claims 28 and 31, the applicant submitted that the arguments held with regards to claim 17 are parallel to those of claims 28 and 31. The examiner respectfully disagrees with the traverse made by the applicant, and acknowledges the applicant that claims 28 and 31 are subject to the same deficiency of disclosure of claim 17.

Regarding claims 18, 19, 29, and 30, the applicant relied on the fact that Hirano does not teach the limitations as amended in the independent claims 17 and 28, and therefore as a result of combination with Syed, Hirano in view of Syed fail to teach all

the limitation in claims 18, 19, 29, and 30. The examiner respectfully disagrees and acknowledges that Hirano as stated above teaches the limitations of the independent claims above and therefore by combining Syed and Hirano as applicable above, the aforementioned claims are rejected as stated.

Regarding claims 22-27 and 32-36, the applicant submits that in Hirano the switch is forced when the data from the first external communication is sent to the second external communication, as opposed to being retrieved. Furthermore, the applicant argues that Moelard does not correct Hirano's missing feature and that the switch is not made by the station requesting from another station information about the first station access point. The examiner respectfully disagrees with the traverse made by the applicant. For claim 22, the examiner notes to the applicant that nowhere in the claim it is explicitly disclosed that the data that was stored in the first station apparatus is being explicitly requested by the second station nor that this station has been disclosed to judge when to ask for the information or data that is stored in the first station. Retrieving an access point is done by the first station apparatus located front-most of the moving body, which acquires and stores the data that will be later used by the second station apparatus. The applicant does not disclose that the second apparatus call for and requests that information, the claims simply states that second station being adapted to refer to the information stored in the first one, this means that the data might have been delivered by certain criteria to be tested for or automatically after a decision made by the first station as is inherently disclosed in Hirano. Furthermore, the applicant fails to claim what events triggers the referral to the

information stored. The claim does not state the mechanism by which it is decided to have the information available, and which of the two requests the transmission/reception. The examiner moreover, would like to point out that the data as disclosed in Hirano is retrieved by the second station regardless of who has requested the transmission/reception, especially that the transmission has to be synchronized, which is an exchange process of messages and acknowledgements before any AP data passes through the intra-mobile-body network. Moelard teaches the obvious missing limitation in Hiranos' disclosure, the combination anticipates the applicant as stated above.

In regards to Claim 32, the applicant applied similarly the arguments as in claim 22. The examiner respectfully disagrees with the traverse made by the applicant and notes that claim 32 suffers from the same deficiencies as in claim 22. Rejection is maintained as mentioned above.

Claims 23-27 and 33-36 depend on claims 22 and 32 respectively, the examiner assumes that the applicant submits that said claims are allowable at least by virtue of their dependency. The examiner respectfully disagrees and acknowledges that said claims inherit the deficiency of the independent claims, therefore are rejected as stated above.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ISSAM CHAKOUR whose telephone number is (571) 270-5889. The examiner can normally be reached on Monday-Thursday (8:30-6:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Perez Rafael can be reached on (571) 272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/I. C./
Examiner, Art Unit 2617

/Rafael Pérez-Gutiérrez/
Supervisory Patent Examiner, Art Unit 2617